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AUTHOR Fitzgerald, William F.; And Others
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ABSTRACT

To investigate the correlation between personality and student use of individualized instruction, 135 dental students were allowed to choose instructional materials. Forty-five accessed both computer and slide/tape programs, 65 used materials in only one format, and 25 used no materials. An analysis of course performance, academic predicators, personality variables and materials selection behavior indicated that aggressiveness and final grade were positively correlated for students who did not use the materials, while these variables were negatively correlated for those who did. Use of materials were also positively correlated to playfulness and curiosity. (SK)

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Personality Correlates of Student-selected Individualized Instruction

Fitzgerald, William F.
University of Michigan

Malvitz, Dolores M.
University of Michigan

Strachan, Donald J.
University of Michigan

WILLIAM F. FITZGERALD, PH.D.

DIRECTOR,
DIVISION OF EDUCATIONAL RESOURCES AND STUDIES
AMERICAN ASSOCIATION OF DENTAL SCHOOLS
1625 MASSACHUSETTS AVENUE, N. W.
WASHINGTON, D. C. 20036
(202) 667-1887

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INTRODUCTION

From the point of view of the educator, Dental School is one of the few professional training environments in which all three domains of human performance must be optimized. The student must be successfully competitive intellectually, proficient in the psychomotor domain, and interpersonally sensitive. Failure in any area results either in expulsion from school or less than optimal dental practice. Dental education is complicated by the diverse entry-level behaviors of its students, and attempts to accomodate those differences are still very much in their infancy.

OBJECTIVE

The present research integrates information gained from the three separate perspectives of 1) academic predictors and performance, 2) affective styles, and 3) student selection of individualized instructional materials in order to investigate the question of why students access such materials.

BACKGROUND OF THE PROBLEM

Students who enter Dental School are among the highest in grade point and aptitude measures, and come to that environment with backgrounds ranging from two years post-high school to doctorates in a variety of disciplines. Anecdotal observation characterizes the entering student as highly competitive, narrowly focused, and well prepared to meet the personal sacrifices which dental education requires.

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The present research relates three areas of dental student behavior to explore the cognitive and affective correlates of students who access individualized instructional materials. This area is deemed to be of paramount importance because as the educational community continues to embrace the advantages of mastery learning, there will be a continuing trend toward providing students with a variety of routes to learn and to demonstrate their knowledge, and there must be a communsurate body of knowledge in the educational community to counsel students in the investment of their time which will minimize time and maximize learning.

This research must be interpreted as narrowly focused and truly exploratory in an area in which all subjects come from the upper two percent of the general population in measured intelligence and in which the domain of their characteristics is greatly constrained by the epitome of self-selection and screening.

METHOD

In the Fall of 1973, entering dental students were asked to participate in research on their personality characteristics. Of the 151 students, sixteen were not included in personality data analyses either at their election or because their responses to the questionnaire indicated that they were not attending to the task seriously.

During the second semester of Dental School, students are required to take a ten-week course in Oral Histology. This course was selected for analysis in the current research because it makes substantial use of instructional media and because the course is specifically designed to cover all essential information during scheduled class times, but allows for repetition and review of those materials at student election. During class meetings it was announced that slide/tape materials could be reviewed at the learning center and that a Computer Assisted Instruction (CAI) drill and practice program was available to simulate the weekly quizzes and the final examination. Data were recorded each time each student accessed slide/tape and computerized (randomly presented) drill and practice test/quiz simulations. The computer program presents multiple-choice, word fill-in and true/false questions in the topic area of the student's choice; the student also specifies the number of questions he is to receive. Materials were available to students during lunch hours, four evenings per week until 11 P.M., all day Saturday, and on Sunday afternoons.

The variables under investigation were arbitrarily divided into four categories:

I. Course performance. This was comprised of the single variable of composite final course score.

II. Academic predictors. The variables in this category included grade point average at entrance to dental school, and the Dental Aptitude Test predictors of academic and motor potential.

III. Instructional materials use. Data were recorded during the ten-week period on the number of accesses and the total length of time spent on the computer and in review of slide/tape programs.

IV. Personality characteristics. These data were derived from the Personality Research Form (copyright 1967, Douglas N. Jackson, Ph.D.) and provided scores on the affective dimensions of abasement, achievement, affiliation, aggression, autonomy, change, cognitive structure, defendence, dominance, endurance, exhibition, harm-avoidance, impulsivity, nurturance, order, play, sentience, social recognition, succorance, and understanding.

RESULTS

1. Of the 135 students, 45 chose to use both the computer and slide/tape programs during the term; 65 students used either of the media formats, and 25 did not use the materials at all.

2. The personality variable of aggressiveness was positively related ($p<.05$) to final grades of students who did not use instructional materials, while this variable was negatively related ($p<.05$) to the final grades of students who used both types of media.

3. The final grades of students who did not use the instructional materials were significantly related ($p<.05$) to risk-taking, and their entering grade point was inversely related to dominance,

and directly related to endurance, succorance, and the Dental Aptitude Test (DAT) prediction of academic success (all $p<.05$).

4. Personality variables were dramatically related to use of instructional materials and to entering grade point average of the students who accessed both types of media. Use of materials was positively related to playfulness ($p<.01$) and curiosity ($p<.05$), and inversely related to exhibitionism ($p<.01$) and the DAT measure of academic success ($p<.05$).

   The entering grade point averages of these students were positively related to harm-avoidance and succorance and inversely related to impulsiveness and autonomy (all $p<.05$).

IMPLICATIONS

As the volume of information to be learned expands, and as the educational community increasingly embraces individualized instruction and mastery learning, it becomes progressively more important to predict the learning environments in which different students will benefit and others will be frustrated. In a general sense, learning opportunities are dictated primarily by administrative convenience and are modestly influenced by student selection. Numerous cognitive predictors and, until recently, a psychomotor measure were weighed in the decision to admit students to dental school. But the profession itself as well as the training for the profession do involve affective components and it is incumbent on the research community to address these predictors of success.

The current research begins to identify personality correlates of student-selected individualized instructional materials use. It is decidedly exploratory, but is a study from which implications for experimentation may emerge. The correlational post-hoc analyses are unable to address the cause and effect relationship between these personality variables and learning performance but they do give some indication of the affective trends which are associated with grades.

It was unexpected to find that there were significant relationships among academic predictors and personality variables of students differentiated on the basis of their use of instructional materials. Further research may yield profiles of students for whom this flexible learning may be more beneficial.

Personality Correlates of Student-selected Individualized Instruction

William F. Fitzgerald
Dolores M. Malvitz The University of Michigan
Donald S. Strachan

When 135 students were given the opportunity to review instructional materials at their election, 45 accessed both computer and slide/tape programs, 65 used materials in only one of the media formats, and 25 did not use the materials at all. An analysis of course performance, academic predictors, personality variables, and materials selection behavior indicated that aggressiveness and final grade were positively correlated for students who did not use the materials while these variables were negatively correlated for students who did. Use of materials were positively related to playfulness and curiosity and negatively related to exhibitionism and predicted success.